

What I Claim Is:

1. A fuel injector for metering, atomizing, and spray targeting fuel, the fuel injector comprising:
 - a seat including a passage extending along a longitudinal axis;
 - a movable member cooperating with the seat to permit and prevent a flow of fuel through the passage; and
 - an orifice plate including:
 - a member including first and second generally parallel surfaces, the first surface generally confront the valve seat, and the second surface facing opposite the first surface; and
 - an orifice penetrating the member and being defined by a wall coupling the first and second surfaces, the wall including:
 - a first portion extending from the first surface, the first portion of the wall extending at a first oblique angle with respect to the first surface, and the first oblique angle varying so as to define an asymmetrical chamfer; and
 - a second portion extending between the first portion and the second surface, the second portion of the wall defining a cylinder extending along an axis at a second oblique angle with respect to the second surface.
2. The fuel injector according to claim 1, further comprising:
 - a perimeter being defined by a juncture of the first and second portions, the perimeter lying in a plane that is orthogonal with respect to the axis and that is oblique with respect to the first surface.
3. The fuel injector according to claim 2, wherein the perimeter is contiguous to the first surface.

4. The fuel injector according to claim 1, wherein the first oblique angle varies about the orifice axis.
5. The fuel injector according to claim 4, wherein the first oblique angle varies at least one degree.
6. The fuel injector according to claim 5, wherein the first oblique angle varies in a first range between 25 to 30 degrees relative to the longitudinal axis and the second oblique angle varies in a second range between 3 and 10 degrees relative to the longitudinal axis.
7. An orifice plate for a fuel injector including a passage extending between an inlet and an outlet, and a seat proximate the outlet and cooperating with a closure member to permit and prevent a flow of fuel through the passage, the orifice plate comprising:
 - a member including first and second generally parallel surfaces, the first surface being adapted to generally confront the valve seat, and the second surface facing opposite the first surface; and
 - an orifice penetrating the member and being defined by a wall coupling the first and second surfaces, the wall including:
 - a first portion extending from the first surface, the first portion of the wall extending at a first oblique angle with respect to the first surface, and the first oblique angle varying so as to define an asymmetrical chamfer; and
 - a second portion extending between the first portion and the second surface, the second portion of the wall defining a cylinder extending along an axis at a second oblique angle with respect to the second surface.
8. The orifice plate according to claim 7, further comprising:
 - a perimeter being defined by a juncture of the first and second portions, the perimeter lying in a plane that is orthogonal with respect to the axis and that is oblique with respect to the first surface.

9. The orifice plate according to claim 8, wherein the perimeter is contiguous to the first surface.
10. The orifice plate according to claim 7, wherein the first oblique angle varies about the orifice axis.
11. The orifice plate according to claim 10, wherein the first oblique angle varies at least one degree.
12. The orifice plate according to claim 11, wherein the first oblique angle varies in a first range between 25 to 30 degrees relative to the longitudinal axis, and the second oblique angle varies in a second range between 3 and 10 degrees relative to the longitudinal axis.
13. A method of forming an orifice plate for a fuel injector, the orifice plate including a member having first and second generally parallel surfaces, the method comprising:
 - forming a pilot hole penetrating the member, the pilot hole extending along a first axis generally perpendicular to the first and second generally parallel surfaces;
 - deforming the pilot hole proximate the first surface, the deforming providing an asymmetrical chamfer with respect to the first axis and defining a first portion of an orifice, the first portion being proximate the first surface; and
 - shaving the pilot hole so deformed, the shaving providing a cylinder extending along a second axis oblique with respect to the second surface and defining a second portion of the orifice, the second portion being proximate the second surface.
14. The method according to claim 13, comprising:
 - laminating the member between first and second layers of a sacrificial material.
15. The method according to claim 14, wherein the member comprises a stainless steel.
16. The method according to claim 15, wherein the member consists of 302 stainless steel.

17. The method according to claim 14, wherein the sacrificial material comprises at least one of copper, aluminum, and tin.
18. The method according to claim 14, wherein a ratio of tensile strength of the member to tensile strength of the sacrificial material is at least 5:1.
19. The method according to claim 18, wherein the ratio is in a range of between 5:1 and 2:1.
20. The method according to claim 14, further comprises stripping the sacrificial material from the base material.
21. The method according to claim 13, wherein the forming the pilot hole comprises at least one of punching, drilling, and coining.
22. The method according to claim 13, wherein the deforming the pilot hole comprises at least one of punch forming, reaming, and coining.
23. The method according to claim 13, wherein the shaving the pilot hole comprises at least one of punching, drilling, and coining.
24. The method according to claim 13, wherein the deforming the pilot hole establishes a perimeter for a juncture of the first and second portions of the orifice, the perimeter lies in a plane orthogonal to the second axis oblique with respect to the second surface.
25. The method according to claim 24, wherein the shaving the pilot hole comprises moving a cutting tool along the second axis, and the cutting tool substantially concurrently initially engaging approximately an entirety of the perimeter.